From: Bruce Bennett <Bruce.Bennett@gdsassociates.com>

Sent: Thursday, September 9, 2021 3:40 PM

To: DOS: Bldgcodebrd <bldgcodebrd@dos.nh.gov>

Cc: Vivian Thompson <Vivian.Thompson@gdsassociates.com>

Subject: Public Comment: Duct Leakage Testing N1103.3.3 and N1103.3.4

Good Afternoon Mr. Chairman and Members of the Board:

I would like to provide the following public comment (and suggested language for the amendment) public comment regarding the proposed adoption of the 2018 IRC set of codes. My comments are relative to the Duct Leakage testing requirements (N1103.3.3) and Duct Leakage limits (N1103.3.4).

ANSI/RESNET standards recognize two types of duct tests that can be performed and both were options under the IRC/IECC 2009 codes:

* Total Duct Leakage – measures all leakage in the duct system and;
* Duct Leakage to Outdoors (LTO)- measures only the leakage that is occurring outside of the buildings thermal envelope.

As the threshold limits for pass/fail are being discussed relative to the adoption of the 2018 IRC and the respective proposed amendments, I believe that it may be an appropriate time to discuss an LTO option.

My team performs a many of the duct tests in the state (mainly in support of the NHSaves energy efficiency programs) and since the adoption of the amended 2009 IRC in September of 2019, we have seen the HVAC industry make great strides to improve the tightness of their duct systems and often make corrections to obtain the current threshold of 8% of Conditioned Floor Area (CFA). However, it is my opinion that the industry, as a whole, is not in a position to make a change from 8% to 4% duct leakage without testing the ducts in the rough and/or testing at post-construction with an option to isolate the leakage to unconditioned spaces (e.g. unconditioned basements or attics).

Some of the common issues being experienced while testing at post construction include:

* Inability to properly seal the ducts to obtain a valid test result;
* The duct boot under cabinets (a.k.a. the kitchen "toe-kick register")
* Registers in carpeted floors
* Registers in gypsum surfaces (for maintenance reasons, registers are not typically sealed to the drywall and our testers are reluctant to apply duct mask tape to finished drywall surfaces to avoid damage to the finishes)

The LTO test is performed at post construction at the same time that that Blower Door test is performed. This allows both tests to be performed with the same post-construction inspection. So for a typical single family home this saves approximately $450-$750 per home but still provides the same energy benefit to the consumer by limiting the amount of leakage to uninsulated spaces.

I will be happy to discuss this with the Board at tomorrow's meeting.

Thank you in advance for the discussion and consideration of the attached public comment.

Sincerely,
Bruce Bennett

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